



# The Ethic



Pollution  
Prevention  
*The Environmental Ethic  
of Lancaster County*

Public Health Starts Here.

Summer 2003

## The P2 Corner

### BEL: Businesses Helping Businesses

E. J. SCHUMAKER, M.P.A., ENVIRONMENTAL PUBLIC HEALTH EDUCATOR II



Businesses usually want to do the right thing to protect the environment. Unfortunately, they don't always know what the right thing is or how to do it. Perhaps they are afraid that it will cost too much money or take too much time to change their equipment or operations. Businesses for Environmental Leadership (BEL) was formed to help businesses do the right thing and save time and money.

BEL is a nonprofit group of small businesses that have made a commitment to reduce waste and use pollution prevention (P2) tools for the benefit of employees and the community. BEL businesses also mentor member businesses, helping them to do the right thing. They want to ensure that our land, air, and water are protected for future generations, and that the citizens of Lancaster County have access to businesses that are good stewards of our natural resources. P2 does more than protect the environment. It protects human health. P2 savings can be found in reduced disposal costs, material costs, operating costs and reduction in employee absenteeism.

In order to achieve these goals, BEL businesses strive to meet certain criteria by performing waste and energy audits and protecting storm water and ground water. As businesses meet the criteria, they receive recognition for their successes. There are various levels to this recognition program and each level has specific criteria. This system of peer recognition encourages other businesses and rewards those that have made a special effort to protect human health and the environment.

Besides the awards, BEL promotes education as a tool to achieving P2 success. Quarterly education presentations provide businesses with the opportunity

to learn more about regulations and waste reduction techniques. On April 22 BEL hosted the 2nd Quarter Educational Presentation to 16 small business owners. The theme of this event was "Water and Your Business." The speakers (and their topics) from the Public Works & Utilities staff were:

- Dave Beyersdorf "Wastewater Information"
- Rock Krzycki "Water Shed Management"
- Nick McElvain "Water Supply and Your Business"



*From left to right: Dave Beyersdorf (Environmental Engineer II), Rock Krzycki (Senior Engineering Specialist) and Nick McElvain (Sanitary Engineer) all with Public Works & Utilities City of Lincoln.*

The 3rd Quarter Educational Event will be On July 22, 2003. The theme is "Materials Reduction and Your Business."

All small businesses of Lancaster County are welcome to apply for membership in BEL. For more information call EJ Schumaker, M.P.A., at 441-8036.



*Please circulate this issue among your staff and coworkers.*

# The Material Safety Data Sheet (MSDS)—part two



BILL LYONS, C.H.M.M., ENVIRONMENTAL HEALTH SPECIALIST II



The MSDS identifies the significant chemicals that compose a material. It includes information about handling and safety precautions and storage requirements. Using abbreviations and acronyms, the MSDS provides businesses and emergency response professionals important information they need about a material.

## HAZARDS

An MSDS lists the physical and health hazards posed by a material. **Physical hazard** is based on scientifically valid evidence that a chemical is a combustible liquid, a compressed gas, an organic peroxide, or an oxidizer (causes rust). The MSDS will indicate if the material is explosive, flammable, *pyrophoric* (can ignite spontaneously when exposed to air), unstable (*reactive*), or water-reactive. The chemical causes physical damage to property, buildings, or plants or poses a risk to the physical well-being or safety of people.

### Ecological Information

An MSDS will provide information about the ecological risk posed by a material. This portion of the MSDS might be in addition to the information contained in the physical hazards portion. Information about the ecological impact of a material would include whether it is harmful to the ozone layer or if it contributes to air pollution. The MSDS should indicate if the material is harmful to water systems. Materials that are harmful to water systems are often called "marine pollutants."

### Health Information

**Health hazard** is based on statistically significant evidence that the chemical can cause acute (sharp and immediate) or chronic (long-term or permanent) health effects in exposed people. This evidence must be based on at least one study conducted in accordance with

established scientific principles. Chemicals that pose health hazards can cause cancer (*carcinogens*) or are toxic or highly toxic. Proven carcinogens that are at .1% or more concentration in a material must be listed on the MSDS. Chemicals can damage the reproductive system, irritate the skin or other organs, burn the skin (*corrosives*), or increase the body's sensitivity to its surroundings (*sensitizers*). They can also damage the liver (*hepatotoxins*), damage the kidneys (*nephrotoxins*), damage nerves (*neurotoxins*), and damage or attack the blood (*hematopoietic*) system. Some chemicals damage the lungs, skin, eyes, or mucous membranes.



## EXPOSURES AND ACCIDENTS

The health hazards section of an MSDS will include information about *pathways*. Pathways are the ways a toxin (poison) or other hazardous material can enter the body. Many hazardous materials can be inhaled through the nose or mouth and into the lungs (*inhalation*). Some are absorbed through the skin; many can be ingested, or swallowed. It is also possible to be exposed to a toxin when the skin is punctured or through an open wound (*injection*).

The American Conference of Governmental Industrial Hygienists, Inc., (ACGIH) publishes the *Threshold Limit Values*. This manual identifies the safe and unsafe levels of over 700 chemicals. The level at which a chemical is unsafe, or the amount the human body can safely tolerate, is the *threshold*. The MSDS will list the ACGIH value along with any other exposure limits used or recommended by the chemical manufacturer or importer. These values are measured in parts per million (*ppm*) or the equivalent of milligrams per cubic



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# Pollution Prevention at Work and Home

BETH MANN, ENVIRONMENTAL HEALTH SPECIALIST II



A study conducted by the Lincoln-Lancaster County Health Department revealed that most families that recycled or performed other environmentally friendly actions did so because one or more of the adults in the family learned about these techniques at work. Therefore the waste reduction and hazardous materials education practices at work protect the lives of families and children in their homes.

Businesses that have pollution prevention (P2) plans in place often enjoy the benefits of cost savings. When a business has a good pollution prevention plan in place the regulatory costs, liability costs, and disposal costs go down. Proper handling and storage of hazardous materials increases safety for all employees and the public, reducing insurance claims, work loss, and worker compensation costs. Training employees how to handle, store, and dispose of hazardous materials properly reduces lost time from work due to exposures or medical costs.



## P2 AT HOME

The same principles apply at home. If employees properly store, handle, and dispose of household hazardous materials, those employees are less likely to require time away from work due to injury or illness. Their families are healthier and safer, so they are less likely to require time away from work to take care of a sick child or spouse.

The problem is that some employees don't know what to do with those hazardous materials at home. Businesses usually have organized and structured hazardous materials management programs with trained staff to handle emergencies and dangerous chemicals. Households do not have that benefit.

Household hazardous wastes are sometimes disposed of improperly by individuals pouring wastes down the drain, on the ground, into storm drains, or putting them out with the trash. The dangers of such disposal methods might not be immediately obvious, but certain types of household hazardous waste have the potential to cause physical injury to sanitation workers,



contaminate septic tanks or wastewater treatment systems, and present hazards to children and pets if left around the house.

You can reduce time spent away from work caused by accidents at home involving hazardous materials. Why not reduce lost time and insurance costs by providing information for your employees to use at home?

## Household Hazardous Waste Collections

Please post the enclosed Household Hazardous Waste Collection brochure on your bulletin board so all employees can see it. Also, please announce the collections in your business newsletter. If you would like to receive information about recycling for households or proper handling and disposal of Household Hazardous Waste, contact Beth Mann at (402) 441-6235.



## MSDS

(CONTINUED FROM PAGE 2)

meter ( $mg/m^3$ ) in the atmosphere. These levels should not be exceeded in an 8-hour period.

The MSDS can save lives in other ways. It will contain first aid and fire fighting measures to use. Knowing what toxins are in a chemical direct medical staff members to the correct treatment. Fire fighters responding to an emergency need to know if there are water-reactive chemicals on site. They can then use foam or a chemical retardant rather than water.

### Precautions

The best way to control exposure is not to have an accident or exposure. Use the chemical in a safe manner, following directions on the MSDS. Some chemicals should not be exposed to air or water or certain other chemicals. Keeping these materials away from these elements when the chemicals are moved or stored reduces the risk of accident.



The MSDS will provide guidelines that workers can take to protect themselves from exposure. These steps include what personal protective equipment (PPE) to wear. Masks and breathing tanks provide respiratory protection; gloves and suits and goggles protect skin and eyes.

In many cases, employees might need to receive special training to use the PPE. Employers are responsible for ensuring employees are properly trained and outfitted. The MSDS might not describe special training or fitting for PPE, but OSHA and NIOSH can provide the needed information. You can also call the LLCHD (441-8040) to find out more about PPE.

### DISPOSAL

Always follow the directions for disposal given on the MSDS. In some cases, the MSDS will indicate that the material (or empty container) can be discarded in the regular trash. Sometimes, materials must be

handled in particular ways or must be discarded using the services of a hazardous waste hauler. You might be required to clean or treat the materials or the containers in which they were shipped or stored. You might need to obtain specific permits in order to dispose of the waste. Always check with local or state regulators before disposing of materials that are hazardous or about which you have any doubts.

The MSDS should tell you if you can recycle the material. Some materials, although hazardous, can be recycled. In this way, the hazardous material is captured and reused, reducing the risks to human safety and the environment. If you are unsure if a material can be recycled, call the LLCHD for more information.

### Sources for information

The manufacturer of a product is a good source for information about the chemical and its MSDS. One excellent internet resource for information about MSDSs and links to MSDS sites is <http://www.denison.edu/sec-safe/safety/msds/msds.shtml#list>. There are many other sites also. You can also call the Lincoln-Lancaster County Health Department with specific questions. Call Bill Lyons, C.H.M.M., at (402) 441-8641.



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**For more information or for P2 technical assistance, call 441-8040.**

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